

A
LECTURE
ON
THE MORAL USES
OF THE STUDY OF NATURAL HISTORY,
DELIVERED BEFORE THE
AMERICAN INSTITUTE OF INSTRUCTION,
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2



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NATURAL HISTORY.

IN the following Lecture I beg leave to ask your attention to a few remarks on the Moral Uses of the Study of Natural History; in other words, the relations of the external world, the universe, to the moral nature. This topic has not the recommendation of entire novelty, for who that has written of man, and of all that surrounds him has omitted to notice his dependencies in a great many regards on what is about, and beyond him? By some who have treated the subject, however, the universe has been looked upon as a whole, or as addressing itself to the moral nature in its masses only, — by others its relations to man have been seen in its laws so called, the supposed agencies by which, so to speak, it is kept together, or its parts act upon each other; my purpose is, (for it is my belief,) to show that in whatever view, and in every view, whether in the smallest hand specimen of a mineral species, or in the congregated Alps, the external, alike in its vastness, and its minuteness, is related to the moral, is designed to act upon it, and for the highest ends. Now this view of my subject has not been the popular, by which I mean the general one; and the student of natural history, how much soever his intellect may have been helped by his studies, and their objects, has rarely regarded them as ministering more powerfully and usefully in the development of his affections, the growth of his moral nature.

Natural history is the most comprehensive of studies. It includes in its widest acceptation the whole external world. What is the universe but a vast arrangement for the being, active or passive, of everything which we comprise in that term. Not as we make things out of others ; not as we give them form and place and change ; but as they came into, and have continued in being. Growth and decay, — reproduction and disappearance, — permanency and mutability in all their degrees and in all their kinds, — whatever has been, or is, the past in its products, the present in its seeming persistency, such are the objects which belong to natural history. One then of its most obvious characters is its *vastness*. But everything in the universe is an individual. Everything in the important and distinctive sense of *being*, is exclusive, is independent, is by itself. A circle surrounds it more impenetrable than all that has been claimed for the magic one, for it is a real barrier, a boundary which by an immutable law of nature cannot be surmounted, by any other being, — and by a law as remarkable as this, nothing attempts its violation. The works of the universe proceed in their silent ceaseless activity, everything kept in its place by itself, and by everything around it, — and altogether making a *whole*. The universe is a whole ; however numerous, however individual and independent each of its parts, its smallest alike with its largest ; still together they make a whole. How humbling is human effort, however vast, when its works are regarded in this relation of wholeness. How abrupt are their edges, how interfering their angles, how awkward, and impracticable in what they attempt to do, or we try to do with them. Do not let us be stopped by that spinning jenny, or that steam engine, or that balloon, — these are all *things*, in no sense are they *ideas*, — they contribute in sooth to man's comfort, or gratify his curiosity, but how little do they minister to his morals or

to his intellect? They have some relations it is granted to his physical state, not nature, but how little, how nothing to his highest, his moral being. With the universe how different in all these regards. This addresses itself in its parts, and in its oneness, to all eyes and to all hearts. We look on and admire and love all; but no jealousy comes over us, no discontent. The everlasting ocean, whether of water, of air, of light, is full of joy to us, and in its brightness and beauty seems to partake of that moral state to which it ministers, and which it does so much to produce.

This sentiment of perfect satisfaction, to use such a word, and this absence of all feeling of jealousy, however useful, beautiful, or vast may be the objects seen and heard by us, is deserving notice here. We do not desire to invent a better atmosphere, a brighter sun, to fabricate a more exquisite flower, or to put together, and paint a more beautiful bird. How salutary is such an influence, when felt in its power, for a being who surrounds himself, or is surrounded by what fills him with discontent; which ministers to a poor jealousy; and all of which when surpassed by him only makes him more proud. The lesson of the universe to man is on every side, *humility*. It comes to him alike from the vast and minute. Everything teaches, and presses it upon him, and without obtruding its moral, asks of him only this, be humble.

There is another aspect in which the universe should always be viewed, and that is its *truth*. Its truth is declared to us by all its manifestations. It is so to speak never at fault, and never deceives us. Go into the darkest cavern, let it be never so deep, — never so vast, — pierce its deep thick walls, and let the opening be never so small that we have made, and what a flood of light pours in. Yes, this winged messenger has come on his errand from millions of miles without a turn, or a false step in all his long way, and beams amidst the thick dark-

ness as brightly as with its unnumbered comrades in the upper and outer air. So is it with water, so it is with the subtle atmosphere,—so is it with the universe. This truth, truth to itself, and to everything which makes itself, is a quality which while it distinguishes all the works of the universe, it was said is a matter for man to think over, to study, to find new illustrations of, in every day and hour of his being. What is the study of natural history but a study of truth? Not an external truth, so to speak, only or chiefly, but a quality, I had almost said a spiritual quality, which belongs to the works of God, and by which we, man, are related to them, and they to us. The study of truth is a good study. What than it, is there which promises so much for man's happiness here and forever as this study? Do you think of gathering wealth around you? how false is this, and how false has it been to man. Is it human learning,—what other minds have done, and other men thought and said,—is here the sure path to truth?—is it place, and a poor power,—a power over a man, or a nation?—is this the object of desire and is it this we study,—alas! truth lies not in its way—and the mind that obtains all that lies in it, may be as broken, as powerless, as untrue, as all that it is foolish enough to think it controls. All these things will be sought,—men will be buried in gold, overlaid with impracticable riches, live in the untruth and love it, with a whole universe of good, of truth, of beauty around them, and go to their graves, and wake to the spiritual—how, it is not given us to know. And so will it be with learning, and with power. But can it be that there will never be a revelation to us of the whole truth of nature? Will not the time come when the silence of nature will be heard? How full, how true is its language forever,—it will be heard. There is another remark in this connexion that is relative and important. We may not see the whole universe. Our sight may be fee-

ble, and a very little of nature may be made known to us. But the little here is as true as the whole. He who has studied a single blade of grass, — loved the humblest flower, or had his heart visited and filled with happy thoughts by any portion of God's universe, has known the truth, — he has in that small joy though it may be, a treasure which will be ministered to and increased by every new revelation of beauty, by every kindred joy he may know. It is this character in the external, of the universe, this spirit of internal life, and endless growth, this truth, which relates the external to man; and leads him out to it for that which he most longs for, permanent sources, true means of his felicity.

Let me allude to another circumstance in our subject which still further commends it to our regard. The universe is all energy, but in its vastest as well as its minutest operations it is noiseless. We get from all that is presented to us in nature the doctrine that the highest efficiency is not incompatible with the most perfect noiselessness. Changes, immense in their amount, — effects, the detail of which we could neither follow, nor understand; so infinite is the number, and so subtle is the agency, — all, and much more than all this, is constantly presented to us, but so unobtrusively, with such unbroken tranquillity, that it requires often an effort of mind for it to be directed to it, and a still stronger one to fix on it the whole attention. Such is the quiet, the repose of nature in the very midst and pressure of an unimaginable efficiency. And now what is this most like when compared with human effort? Is it not most like to thought, the act of thinking, especially when this act is manifested in the work of an author? In the succession of thought, the development of principles, the machinery and action in the epic, whether physical, moral or intellectual, or all these, — is there not in all this an energy, a productiveness, akin to what is exerted in nature,

and characterised by the same unobtrusive repose? A work of art, a picture in the highest range of the art, gives us this notion perhaps still more vividly. We look at such a work with somewhat of that joyful content, — internal peace, — true unalloyed pleasure, which the beautiful in the universe produces — we are in correspondence, — in harmony, — with what? — not with the mere oil, the paint, the canvass before us. Oh no. With much more and higher than all these; we are in sympathy, in feeling, with the mind, the spirit which caused all this beauty, which painted this picture, and that spirit has been a creator, and we are looking at its exquisite creation. How true is the doctrine of that consummate philosopher, or knower of the human soul, Coleridge, which teaches that the cause, the spring of all we see and love in nature and art is in the spiritual, — something more and other than the mere arrangements of matter upon the surface of which we only look, something within everything, and without everything, which pursues its sublime and noiseless labors, unperceived by us, or only perceived when our spirits hold communion with it, — become, I ought to have said, one with it.

How grateful is this lesson of tranquillity to man. How much does he need it. We live in a state of unrest. We are pulling down and building up to the extent of our power, everything placed within our reach. The ancient and venerable of human institutions, — the external in art, or in nature, — whatever has been or is, is not passing away indeed, but assuming new forms, — the changes incident to all and everything, and which are constantly in progress, silent progress, are attempted to be hastened by the alterations and substitutions of what we hope to find better, and which something whispers to us too audibly to be unheard, will be better. Wealth is the power which one, or many exert, and thought is the instrument with others; which however it may be, physical considerations are the

ends of much of our activity, and noise, tumult and unrest attend the whole operation. Now is it not good for man in such an age, to have before him daily and hourly, what may teach him the salutary truth that noise and universal disquiet are not necessary for the utmost efficiency of a moral nature, — that he has higher wants, than physical ones, that there are sources of happiness around him, and close to him, truer and better than what he is laboring after?*

I have alluded to the vast, and to the numberless in nature. It may be asked — with so much vastness, — with such unnumbered objects, how can the universe be made an object of study, of knowledge? This is a pertinent question. There have been men who have been filled with the universe, with whom nature has been as a beloved child, or an honored, beloved mother, whose will concerning man and his soul, has been as a law of love, and which they have bowed to with an unutterable reverence. Such a naturalist is Wordsworth. I do not say that he has not most faithfully studied the universe, — I do not say that he has not found more truth in it than all the professed naturalists in the world. To such a mind the outward world is a vast volume. Its pages, never to be exhausted, are records of relations, not barely things, new in every one of their turnings, and true whenever turned. To such a mind, vastness, and number, and variety, produce no confusion, for its own nature harmonizes with, and reaches to, all these qualities of the external. Such a man may be said truly to apprehend nature. He may never dream of explaining what he sees, any more than he would attempt to communicate an intellectual state, or give to another a portion of his own mind. And explanation here is not

* We are told that in building the temple of Jerusalem that it was commanded that the sound of the axe and the hammer should not be heard; as if in such a work the silence which attends the operations of nature should brood over and sanctify the labors of man.

needed. Every human mind may so apprehend the universe. It may be not equally, but in whatever degree it will be alike true, and alike a whole.

But aside from this apprehension of harmony, — this knowledge of the universe in its truth, in its moral aspects, and which every man should strive for, and for the attaining of which, nothing but a sincere love of truth is necessary ; — I say aside and independent of this study, there is another, which continues to be emphatically called the study of Natural History ; that, viz., which is occupied about the individuals themselves, and the relations of difference which subsist among them. To one uninformed in this matter such knowledge might seem of all others the most difficult to arrive at. The wisest of men was distinguished, among other things, by his knowledge in one department of this study ; for it is said, he knew every plant from the cypress to the hyssop of the wall. But modern labors have made this study most easy. Classification, the philosophy, as well as the nomenclature of all natural science, is so perfect, that confusion has ceased in every department, and we place things together as truly, and as easily, however separated by accidental distance, or however rare, and hitherto unknown, as we arrange what we are most intimately acquainted with. We can raise a gigantic fabric, from the smallest fragment of a bone, it may be of an extinct species — learn all its habits, — its moral, so to speak, and its physical history, and all this as easily as we can put together a human skeleton, and tell of the character and habits of the human animal to which it belonged.

And why do we never fail ? Where is the secret of all this certainty, where there seems so little to guide us ? Why do we take on trust, declarations which come from something like human testimony ? It is mainly because of its little resemblance to this testimony in the common use of the word. It is because of the unchanged and un-

changeable truth of the universe. This character belongs to its parts, its minutest portions, as well as to its vastest. Its individual things are true, as well as the whole they make ; the smallest grain of sand, the smallest ray of light, as is the whole universe. This study of Natural History, then, distinguished on all sides as it is from that to which I first alluded, has vast uses. It accustoms the mind to the contemplation and minute investigation of the true ; it does present objects to the mind, of more real worth than are many human pursuits, which, unhappily, are more prized. But what especially commends this study, is the undoubted fact, that it may be pursued by everybody ; and, so far from interfering with any other, it will be the very best preparation for all.

To enable men to pursue this study, vast collections have been made, and every day adds to these treasures. No expense has been spared for the preservation of these collections ; and states have vied with each other, and individuals with whole nations to increase these stores. Our own country, and this city have entered into these labors, and with a zeal which nothing can subdue.

But why have these collections been made ? Why so much of time, talent and money expended ? What is the whole value of such possessions ? The answers to these questions may be gathered from what has already been said. But indulge me while I speak more at length of the use of Natural History, as presented to us in such collections.

We certainly have not made these collections for themselves alone. We do not make these careful arrangements, that what we have got may be better to themselves in any sense of the word. The mineral would have rested as well in its native earth, and the shell in " the deep bosom of the ocean buried " ; the remains of the ancient and the extinct, of the modern and existing species, would have been as secure without this human care as with it. The decay, or

rather change, incident to all things on earth, or in air, would, to all these objects of our deep concern, have been alike unnoticed and unknown.

We look to good in them, then, mainly from their relations — their relations to all other things, and especially to ourselves. It is, however, to ourselves chiefest, that they have most value. They are related alike to the intellect and the affections; they, with all the external world, are a revealed force; they are manifestations of a power within and around them, which is felt by us to be like to that power within ourselves which gives to us efficiency; the force-principle, if I may so speak, in virtue of which, we do alike the will of God, and carry into effect every purpose, accomplish every design. Is there any other way by which the external world can do man good? Is it beauty that attracts us, — and can it do so, but by a power or state within us, with which it is in perfect harmony? Is it in the external only, or with forms, that we have to do? If so, how is that which is without form, so to speak, the unlimited and illimitable spirit, so readily brought to sympathise with that external; to gain nutriment from it — to feel deeply conscious that in the enjoyment of the beautiful, its capacity of farther enjoyment has been revealed to it; and, in this conviction, to find a new and stronger motive to go farther than the actual, that which it has already acquired, into new regions of nature, to gather there new and larger supplies for the mind's wants, and this in endless progression. There is nothing mysterious or unintelligible in this notion of the relations of the external with ourselves, of the inherent power in them, in virtue of which, they are just what they are, with that within us which constitutes ourselves. At least the mystery is no greater, than our own nature, and he who rejects a great truth, because it involves the condition of faith before it can be received, has but a narrow field of truth before him. He has little more to ask

than wherewithal he shall be fed, clothed and sheltered, and how he may in the easiest mode satisfy these conditions of his comfortable being.

These collections are made, then, as means ; in no sense as ends. An end, let it be what and where it may, is the sure stop to farther effort in its own particular direction. It is the death and the grave of progress. It belongs to nothing else, and, philosophically as well as morally, it is a state that never can be. To us the intimate connexions and reciprocal action of all things, on each other may not be obvious, or they may never be dreamed of. But it is no less true, that everything in nature, the most minute with the vastest, is active, is exerting energy, is operating within itself, and upon everything beyond itself. It is never truly the same, never at rest. It never presents to us an end, and if we find one, it is because we have denied to ourselves the perception of progress, shut our eyes to a ceaseless energy, in a scene in which everything, by a universal law is active and progressive.

How deep is the interest, then, in nature, and in its constant study. How does it come to us with revelations of beauty and of good, in all and every of its manifestations. How does it speak of the internal power, of which it is the external, the visible representation. How great becomes to us the value of everything, no matter how common, when this, its true character, is felt and acknowledged by us. We no longer wonder at the surpassing zeal with which men have entered into these studies. We see them panting on the line, and follow them in their progress of pain and privation to the farthest pole. We find them everywhere cheerful, elevated, constant, going on by that internal power, which without a figure, when pure and free, removes mountains. These men are the truest spiritualists, for without the enduring perception of the exact harmony between themselves and the whole of nature, they must have failed ; but in the

clearness of their internal light, they have never attempted the impossible, and therefore has it been that they have come back again from their long exile from man, and brought with them the proofs of a power within and without them, which otherwise would in its whole amount have never been known. The intellectual and spiritual relations of the external, then, are those things for which we should love and truly prize nature and its studies. They are the best nutriment for the mind, and for the affections. When seen in their truth, these studies never produce pride, and for benevolence, they are the best ministers. We feel always and ever, that such studies belong to everybody, in the great sense of universal community. The naturalist, who writes in the true inspiration of nature, does it for the whole human family. He cannot have pride for the success of his labors, for these labors never encourage selfishness. His collections, made as they as they often are, with the extreme of self-sacrifice, are felt by him to belong to everybody. He throws them at once into the common stock, and, as in the apostolic times, there is here, at least, a community of goods. The lives of distinguished naturalists, are abundant proof of all this. They discover to us the greatest simplicity, blended with a corresponding mildness, gentleness of disposition. Their own success is grateful to them because of their objects, not on account of themselves. They are hence always delighted with the success of others, and envy, malice, and uncharitableness, have no place with them.

What is thus true of the devoted, belongs in its measure to all cultivators of natural science. They may all read "sermons in stones, books in the running brooks, and good in everything." They may all find solace here, for the perturbation, and the discomfort which belongs to so much of their common toil. The mind will be stored with good, and knowledge, and the affections raised and purified. I have

spoken of the relations of the external world to the moral nature, and of the uses of Natural History, as discovered to us by those who have and do devote themselves to its study. But these uses should not be confined in their operation to a few, — to any particular class in a community. The means of this study should be accessible to all, to every man, woman and child, everywhere, more especially should this be the case, wherever collections are made. The whole benefit of such collections should be within the easy reach of the whole community.

There are classes of men everywhere, which, from their occupations and condition, are excluded from all, or the most that is done by other, and so considered, the more favored classes, and absolutely know but little more of the objects of their interest, than the outside of the houses which they may build for their accommodation, or the clothes they may make for them to wear. Of the great objects of principal and personal interest of those who devote some or much of their time to study, and of those who devote wealth for accumulating around them the means of a various learning, they absolutely know nothing. Hence the height and depth of that wall of partition which separates the classes of men, and hence that want of true sympathy between them, the exercise of which, is so sure to make happier and better all who cherish it.

This state of things is peculiar to America and England. Almost everywhere else, and in all periods of the history of other nations, a common property, in its important and most useful sense, alike among the rich and the poor, the learned and the unlearned, has been, and is held, in the science, the literature, and the arts of the times. The philosophers of ancient Greece, discoursed of philosophy in public. In the shop of a mechanic, Socrates could find a willing and intelligent auditory, as he taught his divine science. In modern times, in Italy and France, for instance,

the richest stores of art, natural history, &c., are open to the enjoyment and to the making better of all. I have been told, with what truth I cannot vouch, that when the Italian peasantry come up to Rome at the seasons of the high festivals of their church, they may be seen of all ranks, and in all costumes, now sauntering among the ruins of the eternal city, and now gazing with reverence and pleasure at the immortal in art, the wonderful and beautiful of nature in the Museum or the Vatican. They go to all that may be seen with the freedom and pleasure, that a mind fitted to enjoy the good and the beautiful always bestows. Much of all this is true of France. The Louvre and the Garden of Plants, with all they contain, are thus open and free. You are not there, as in England, met with a dun at the entrance place to the curious or the venerable, whether the object of your interest be the property of the public or the individual.

And now what is the effect on the national character of these countries, viz., Italy and France? I mean in regard to the things of which I have spoken. It discovers itself in the interest which all from the highest to the lowest take, in the preservation of these great works of nature and art. There, statuary is safe from mutilation, and the most delicate specimens of Natural History, are looked on and admired without being rudely handled and broken. I have nothing to say of the character of these nations in other regards. However debased, profligate, and sensual this may be, we have abundant causes for all in the superstition, the ignorance, and moral blindness in which it is the supposed policy of the governments to keep them. I speak of one use of the mind, only, its apprehension, and love of beauty, and freedom here displays itself in the fulness and depth of that love.

How is it with us in all this, and how stands England in regard to it? A very different state of feeling and practice

answers the question. We must lock up the rare and the beautiful, or they may very soon change their forms or their places. They are not valued for those things only on account of which they can only have value, their actual state. Something must be learnt about them which they do not and cannot reveal. I once heard a distinguished professor of anatomy begin a lecture which required many, and very nice preparations for its illustration, by saying that a learned foreign traveller to America had said that our national characteristic was a desire to know the strength of things, and he told the class that they might take his honest word for it that his specimens were very brittle, and earnestly besought them not to try their strength.

Why is this? It is not only because there is a want of current taste amongst us, a perception and enjoyment of the beautiful in nature and art. But because this taste is not wide nor deep, nor sufficiently developed and ministered to. It is soon satisfied, and then the senses, especially the touch, put in their claim for some portion of the gratification. Taste is not wanting. Those who went much to the earliest Atheneum exhibitions of pictures here must recollect to have seen many people there from a class not ordinarily found in similar places of resort. They must have met them there with pleasure. They saw how many came, how long they staid, and though the characteristic silence of the class, their natural unwillingness to express what they feel, even in their countenances, was apparent, still it was obvious they were pleased. They were in the presence of treasures of art, and they showed they were not indifferent to the beauty and sublimity which were revealed.

Communities may be benefitted in the same way by collections in natural history. It is their true interest to render such collections as really public as they can possibly be made. They should bestow on societies formed for this

study their more liberal patronage, and by this patronage make their collections the property of the whole public. In this way they multiply the means of innocent, and truly elevating gratification. They impart knowledge, one of the fundamental principles of which, as we have seen, is truth, and the invigorating influence of this principle comes at length to be deeply felt and acknowledged by all. The members of societies so patronized should feel the claims of the government and of the people which are established in this way, and should answer them by the most liberal bestowment of their time and their talents in communicating knowledge. They should throw open their collections, and be statedly ready to communicate all useful knowledge to all who seek after it. Let us admit every body to the treasures that are made, that they may acquire moral, intellectual, incorruptible wealth from these its true sources, — that they may be awakened to the love and veneration of the beautiful and the true, — that here the mind may rest from its unquiet and its unsatisfying labors, and a more healthy tone be imparted to the moral state of communities.

Aside from the benefits which a community may derive from free access to such collections, there is a consideration which deserves notice, and this is that societies themselves, their members, will always derive advantage from the same thing. The good and the labor a man does for others always return to his own bosom. He has a high motive for continued effort in the midst of many and interested witnesses. How can progress be for a moment checked when it is thus helped on, because it is good that it should go on to all in any way concerned.

In conclusion, and as an inference from all that has been said, however imperfectly this may have been done, let me remark, that opportunities for the development and increase of the perception and enjoyment of the truth of nature, in the vast, and the minute, the beautiful and the

sublime everywhere should be freely offered to all. There is one class which has peculiar claims, and I need make no apology for presenting and urging these on this occasion and before such an audience. This class is the young. The freshness, the simplicity, the susceptibleness, and let me add the moral purity and freedom of youth, singularly fit it for the highest and best ministry of nature. In the city, opportunities for this are not large. They must be found in collections of natural history, and especially in the dispositions of those who make, own, and understand them, to communicate much of what such collections can teach. In the country, opportunities exist and present themselves everywhere. They are to be found in the succession of the seasons, made more striking by the occupations, as well as changes, constantly taking place, — in the glorious and unobstructed firmament, — in the stars, the poetry of heaven, — in the forest, that quiet and kindly brotherhood of trees, — in the silence, the order, the dignity, so to speak, which everywhere prevails. Everything in short is abroad, and at hand in the country to minister to the development and the growth, of the moral nature. This Institute is designed to promote education. I understand by this word the revelation to the individual of his moral and intellectual nature. The work of education is not half done, its purpose not half accomplished if it rest in the cultivation of a few of the mind's powers. Let it be instrumental in making the great revelation which is its sacred office. Let the young know and feel that whenever they think, and whenever they act, they do both and everything by the use of the moral and intellectual nature within them; and above all that the whole universe was called into being to reveal, and harmonize with, the spiritual in man, as well as to sustain his physical being. How mysterious seems and is this revelation of the mind, the spiritual! What power does the consciousness of such possessions bring with it! How much will education have

accomplished when this shall be its consummation. My purpose has been to show how far the study, the knowledge and especially the love of nature, the love of its truth, may lead to it.